

CLAIMS

What is claimed is:

- 1 1. A method for provisioning user interface comprising:
  - 2 determining locally by a client device, a current display state for a user
  - 3 interface; and
  - 4 provisioning by the client device, a current instantiation of said user interface
  - 5 in accordance with one or more display state definitions corresponding to the
  - 6 determined current display state, each of said one or more display state definitions
  - 7 including one or more display cell definitions for one or more display cells of said
  - 8 user interface.
- 1 2. The method of claim 1, wherein said determining is locally made by said
- 2 client device in accordance with a display cell definition for a rendered display cell of
- 3 an immediately preceding instantiation of the user interface with which a user
- 4 interacted, said display cell definition including a state transition rule specifying the
- 5 display state for the user interface in the event a user interacts with the rendered
- 6 display cell.
- 1 3. The method of claim 1, wherein said provisioning comprises generating by
- 2 said client device at least a first portion of the current instantiation of the user
- 3 interface in accordance with a first display cell definition for a first display cell of the
- 4 user interface, the first display cell definition specifying constituting contents of said
- 5 first display cell of the user interface.

1 4. The method of claim 3, wherein said provisioning further comprises  
2 generating by said client device a second portion of the current instantiation of the  
3 user interface in accordance with a second display cell definition for a second  
4 display cell of the user interface, the second display cell definition specifying  
5 constituting contents of said second display cell of the user interface.

1 5. The method of claim 1, wherein said provisioning comprises generating by  
2 said client device a portion of the current instantiation of the user interface with  
3 constituting contents inherited from a pseudo instantiation of the user interface  
4 based on a pseudo display state.

1 6. The method of claim 1, wherein said display state is multi-dimensional.

1 7. A method for provisioning user interface comprising:  
2 generating by a client device a first portion of a first instantiation of an user  
3 interface in accordance with a display cell definition for a display cell, the display cell  
4 definition specifying constituting contents for said display cell for said first portion of  
5 said first instantiation of said user interface; and  
6 generating by the client device a second portion of a second instantiation of  
7 said user interface in accordance with said display cell definition for said display cell,  
8 said display cell definition also specifying constituting contents for said display cell  
9 for said second portion of said second instantiation of said user interface.

1 8. The method of claim 7, wherein said method further comprises generating by  
2 said client device a third portion of said first/second instantiation of said user

3 interface with constituting contents inherited from a pseudo instantiation of the user  
4 interface.

1 9. A method for provisioning user interface comprising:  
2 generating by a client device a first portion of an instantiation of a user  
3 interface with constituting contents inherited from a pseudo instantiation of the user  
4 interface; and  
5 generating by the client device a second portion of said instantiation of said  
6 user interface in accordance with a display cell definition for a display cell, the  
7 display cell definition specifying constituting contents for said display cell for said  
8 instantiation of said user interface.

1 10. A method for provisioning user interface comprising:  
2 provisioning by a client device a first instantiation of a user interface in  
3 accordance with a first one or more display state definitions;  
4 determining locally by said client device a next display state for the user  
5 interface based on a user's interaction with a portion of the first instantiation of the  
6 user interface and in accordance with said first one or more display state definitions,  
7 which include specifications for state transition rules in the event of user  
8 interactions; and  
9 provisioning by the client device a next instantiation of the user interface in  
10 accordance with a second one or more display state definitions for the determined  
11 next display state.

1 11. A method for provisioning user interface comprising:

2                   transmitting by a server to a remote client device, a first one or more display  
3 state definitions specifying constituting contents for a first plurality of display cells of  
4 a first instantiation of an user interface;

5                   transmitting by the server to said remote client device, said constituting  
6 contents for said first plurality of display cells for rendering on said remote client  
7 device in accordance with said first display state definition;

8                   transmitting further in advance by the server to said remote client device, a  
9 second one or more display state definitions specifying constituting contents for a  
10 second plurality of display cells of a second instantiation of an user interface to be  
11 rendered in response to a first user interaction with said first instantiation of the user  
12 interface; and

13                   transmitting further in advance by the server to said remote client device, said  
14 constituting contents for said second plurality of display cells for rendering on said  
15 remote client device in accordance with said second display state definition in the  
16 event said first user interaction occurs.

1   12.   The method of claim 11, wherein the method further comprising:

2                   transmitting by the server to said remote client device, constituting content of  
3 a pseudo instantiation of said user interface to be inherited in at least a selected one  
4 of said rendering of said first and said second instantiation of said user interface.

1   13.   The method of claim 11, wherein each of said first and second one or more  
2 display state definitions comprises first/second plurality of display cell definitions  
3 correspondingly specifying constituting contents for said first/second plurality of  
4 display cells.

1 14. The method of claim 13, wherein each of said first and second display cell  
2 definitions further comprises first/second plurality of display state transition rules  
3 correspondingly specifying display states to be transitioned to in the event of user  
4 interactions with the first/second display cells.

1 15. A product comprising:  
2 a first plurality of programming instructions to implement a user interface  
3 provision function equipped to determine a current display state for a user interface,  
4 and to provision a current instantiation of said user interface in accordance with one  
5 or more display state definitions for the determined current display state, each of  
6 one or more said display state definitions including one or more display cell  
7 definitions for one or more display cells of said user interface; and  
8 a second plurality of programming instructions implementing at least one  
9 other product function.

1 16. The product of claim 15, wherein said first programming instructions further  
2 equip said user interface provision function to make said determination in  
3 accordance with a display cell definition for a rendered display cell of an immediately  
4 preceding instantiation of the user interface with which a user interacted, said  
5 display cell definition including a state transition rule specifying the display state for  
6 the user interface in the event a user interacts with the rendered display cell.

1 17. The product of claim 15, wherein said first programming instructions further  
2 equip said user interface provision function to perform said provisioning by  
3 generating at least a first portion of the current instantiation of the user interface in  
4 accordance with a first display cell definition for a first display cell of the user

5 interface, the first display cell definition including constituting contents of said first  
6 display cell of the user interface.

1 18. The product of claim 17, wherein said first programming instructions further  
2 equip said user interface provision function to perform said provisioning by  
3 generating a second portion of the current instantiation of the user interface in  
4 accordance with a second display cell definition for a second display cell of the user  
5 interface, the second display cell definition including constituting contents of said  
6 second display cell of the user interface.

1 19. The product of claim 15, wherein said first programming instructions equip  
2 said user interface provision function to perform said provisioning by generating a  
3 portion of the current instantiation of the user interface with constituting contents  
4 inherited from a pseudo instantiation of the user interface based on a pseudo  
5 display state.

1 20. The product of claim 15, wherein said display state is multi-dimensional.

1 21. The product of claim 15, wherein the product is a selected one of a browser  
2 and an operating system.

1 22. A product comprising:  
2 a first plurality of programming instructions to implement a user interface  
3 provision function equipped to generate a first portion of a first instantiation of an  
4 user interface in accordance with a display cell definition for a display cell, the  
5 display cell definition specifying constituting contents for said first display cell for

6 said first portion of said first instantiation of said user interface, and to generate a  
7 second portion of a second instantiation of said user interface in accordance with  
8 said display cell definition for said display cell, the display cell definition also  
9 specifying constituting contents for said display cell for said second portion of said  
10 second instantiation of said user interface; and  
11 a second plurality of programming instructions to implement at least one  
12 other product function.

1 23. The product of claim 22, wherein said first programming instructions further  
2 equip said user interface provision function to generate a third portion of said  
3 first/second instantiation of said user interface with constituting contents inherited  
4 from a pseudo instantiation of the user interface.

1 24. A product comprising:  
2 a first plurality of programming instructions to implement a user interface  
3 provision function equipped to generate a first portion of an instantiation of a user  
4 interface with constituting contents inherited from a pseudo instantiation of the user  
5 interface, and to generate a second portion of said instantiation of said user  
6 interface in accordance with a display cell definition for a display cell, the display cell  
7 definition specifying constituting contents for said display cell for said instantiation of  
8 said user interface; and  
9 a second plurality of programming instructions to implement at least one  
10 other product function.

1 25. A product comprising:

2           a first plurality of programming instructions to implement a user interface  
3 provision function equipped to provision a first instantiation of a user interface in  
4 accordance with a first one or more display state definitions, to determine a next  
5 display state for the user interface based on a user's interface with a portion of the  
6 first instantiation of the user interface and in accordance with said first one or more  
7 display state definitions, which include specifications for state transition rules in the  
8 event of user interactions, and to provision a next instantiation of the user interface  
9 in accordance with a second one or more display state definitions for the determined  
10 next display state; and

11           a second plurality of programming instructions to implement at least one  
12 other product function.

1       26. An application server comprising:  
2           a first plurality of programming instructions to implement a communication  
3 function; and  
4           a second plurality of programming instructions to implement a user interface  
5 provision function equipped to transmit to a remote client device, a first one or more  
6 display state definitions specifying constituting contents for a first plurality of display  
7 cells of a first instantiation of an user interface, and constituting contents for said  
8 first plurality of display cells for rendering on said remote client device in accordance  
9 with said first one or more display state definitions, and to transmit further in  
10 advance to said remote client device, a second one or more display state definitions  
11 specifying constituting contents for a second plurality of display cells of a second  
12 instantiation of an user interface to be rendered in response to a first user  
13 interaction with said first instantiation of the user interface, and said constituting  
14 contents for said second plurality of display cells for rendering on said remote client

15 device in accordance with said second one or more display state definitions in the  
16 event said first user interaction occurs.

1 27. The application server of claim 26, wherein the second plurality of  
2 programming instructions further equip the user interface provision function to  
3 transmitting to said remote client device, constituting content of a pseudo  
4 instantiation of said user interface to be inherited in at least a selected one of said  
5 rendering of said first and said second instantiation of said user interface.

1 28. The application server of claim 26, wherein each of said first and second one  
2 or more display state definitions comprises first/second plurality of display cell  
3 definitions correspondingly specifying constituting contents for said first/second  
4 plurality of display cells.

1 29. The application server of claim 28, wherein each of said first and second  
2 display cell definitions further comprises first/second plurality of display state  
3 transition rules correspondingly specifying display states to be transitioned to in the  
4 event of user interactions with the first/second display cells.

1 30. A client device comprising:  
2 a storage medium having stored therein a plurality of programming  
3 instructions to implement a user interface provision function equipped to determine a  
4 current display state for a user interface, and to provision a current instantiation of  
5 said user interface in accordance with one or more display state definitions for the  
6 determined current display state, each of said one or more display state definitions

7 including one or more display cell definitions for one or more display cells of said  
8 user interface; and

9 a processor coupled to the storage medium to execute the programming  
10 instructions.

1 31. The client device of claim 30, wherein said programming instructions further  
2 equip said user interface provision function to make said determination in  
3 accordance with a display cell definition for a rendered display cell of an immediately  
4 preceding instantiation of the user interface with which a user interacted, said  
5 display cell definition including a state transition rule specifying the display state for  
6 the user interface in the event a user interacts with the rendered display cell.

1 32. The client device of claim 30, wherein said programming instructions further  
2 equip said user interface provision function to perform said provisioning by  
3 generating at least a first portion of the current instantiation of the user interface in  
4 accordance with a first display cell definition for a first display cell of the user  
5 interface, the first display cell definition including constituting contents of said first  
6 display cell of the user interface.

1 33. The client device of claim 32, wherein said programming instructions further  
2 equip said user interface provision function to perform said provisioning by  
3 generating a second portion of the current instantiation of the user interface in  
4 accordance with a second display cell definition for a second display cell of the user  
5 interface, the second display cell definition including constituting contents of said  
6 second display cell of the user interface.

1 34. The client device of claim 30, wherein said programming instructions equip  
2 said user interface provision function to perform said provisioning by generating a  
3 portion of the current instantiation of the user interface with constituting contents  
4 inherited from a pseudo instantiation of the user interface based on a pseudo  
5 display state.

1 35. The client device of claim 30, wherein said display state is multi-dimensional.

1 36. The client device of claim 30, wherein the client device is a selected one of a  
2 wireless telephone, a palm sized computing device, and a notebook sized  
3 computing device.

1 37. A client device comprising:  
2 a storage medium having stored therein a plurality of programming  
3 instructions to implement a user interface provision function equipped to generate a  
4 first portion of a first instantiation of an user interface in accordance with a display  
5 cell definition for a display cell, the display cell definition specifying constituting  
6 contents for said display cell for said first portion of said first instantiation of said  
7 user interface, and to generate a second portion of a second instantiation of said  
8 user interface in accordance with said display cell definition for said display cell, said  
9 display cell definition also specifying constituting contents for said display cell for  
10 said second portion of said second instantiation of said user interface; and  
11 a processor coupled to the storage medium to execute the programming  
12 instructions.

1 38. The client device of claim 37, wherein said programming instructions further  
2 equip said user interface provision function to generate a third portion of said  
3 first/second instantiation of said user interface with constituting contents inherited  
4 from a pseudo instantiation of the user interface.

1 39. A client device comprising:  
2 a storage medium having stored therein a plurality of programming  
3 instructions to implement a user interface provision function equipped to generate a  
4 first portion of an instantiation of a user interface with constituting contents inherited  
5 from a pseudo instantiation of the user interface, and to generate a second portion  
6 of said instantiation of said user interface in accordance with a display cell definition  
7 for a display cell, the display cell definition specifying constituting contents for said  
8 display cell for said instantiation of said user interface; and  
9 a processor coupled to the storage medium to execute the programming  
10 instructions.

1 40. A client device comprising:  
2 a storage medium having stored therein a plurality of programming  
3 instructions to implement a user interface provision function equipped to provision a  
4 first instantiation of a user interface in accordance with a first one or more display  
5 state definitions, to determine a next display state for the user interface based on a  
6 user's interface with a portion of the first instantiation of the user interface and in  
7 accordance with said first one or more display state definitions, which include  
8 specifications for state transition rules in the event of user interactions, and to  
9 provision a next instantiation of the user interface in accordance with a second one  
10 or more display state definitions for the determined next display state; and

11           a processor coupled to the storage medium to execute the programming  
12 instructions.

1    41.    A server comprising:  
2           a storage medium having stored therein a plurality of programming  
3           instructions to implement a user interface provision function equipped to transmit to  
4           a remote client device, a first one or more display state definitions specifying  
5           constituting contents for a first plurality of display cells of a first instantiation of an  
6           user interface, and constituting contents for said first plurality of display cells for  
7           rendering on said remote client device in accordance with said first one or more  
8           display state definitions, and to transmit further in advance to said remote client  
9           device, a second one or more display state definitions specifying constituting  
10           contents for a second plurality of display cells of a second instantiation of an user  
11           interface to be rendered in response to a first user interaction with said first  
12           instantiation of the user interface, and said constituting contents for said second  
13           plurality of display cells for rendering on said remote client device in accordance  
14           with said second one or more display state definitions in the event said first user  
15           interaction occurs; and  
16           at least one processor coupled to the storage medium to execute the  
17           programming instructions.

1    42.    The server of claim 41, wherein the plurality of programming instructions  
2           further equip the user interface provision function to transmitting to said remote  
3           client device, constituting content of a pseudo instantiation of said user interface to  
4           be inherited in at least a selected one of said rendering of said first and said second  
5           instantiation of said user interface.

1 43. The server of claim 41, wherein each of said first and second one or more  
2 display state definitions comprises first/second plurality of display cell definitions  
3 correspondingly specifying constituting contents for said first/second plurality of  
4 display cells.

1 44. The server of claim 43, wherein each of said first and second display cell  
2 definitions further comprises first/second plurality of display state transition rules  
3 correspondingly specifying display states to be transitioned to in the event of user  
4 interactions with the first/second display cells.

1